2018 Annual Water Quality Report

Fort Belvoir
PWS ID: VA6059450

This report contains important information about your drinking water. If you do not understand it, please have someone explain or translate it for you.

Este informe contiene información muy importante sobre su agua potable. Si no lo comprende, favor acudir a alguien que se lo pueda traducir o explicar.

Continuing Our Commitment

A Message From Military Services Group President Mark K McDonough

American Water's Military Services Group owns and operates water and wastewater utilities under the Utilities Privatization program and proudly provides water and wastewater services to military communities around the country, including yours. Our Company's Vision – "We Keep Life Flowing" drives everything we do for you, our customers. To reinforce our vision and maintain your trust, it's important that we share with you information about our commitment to providing high-quality water service.

I am pleased to provide you with the 2018 Annual Water Quality Report with detailed information about the source and quality of your drinking water. We have prepared this report using the data from water quality testing conducted for your local water system from January through December 2018. You'll find that we supply water that surpasses or meets all federal and state water quality regulations.

With equal importance, we place a strong focus on acting as stewards of our environment. In all of the communities we serve, we work closely with the local directorates of public works, civil engineering squadrons, local environmental departments and state regulatory agencies to protect environmental quality, educate customers on how to use water wisely, and ensure the high quality of your drinking water every day.

At American Water, our values – safety, trust, environmental leadership, teamwork, and high performance – mean more than simply making water available "on-demand". It means every employee working to deliver a key resource for public health, fire protection, the economy and the overall quality of life we enjoy – We Keep Life Flowing. For more information or for additional copies of this report, visit us online at www.amwater.com

Sincerely,

Mark K McDonough

President – American Water's Military Services Group

What is a Water Quality Report?

To comply with the Virginia Department of Health and the U.S. Environmental Protection Agency (EPA) regulations, American Water issues a report annually describing the quality of your drinking water. The purpose of this report is to provide you an overview of last year's (2018) drinking water quality. It includes details about where your water comes from and what it contains. We hope the report will raise your understanding of drinking water issues and awareness of the need to protect your drinking water sources.

Public Participation

Public input concerning water quality is always welcome. Water quality suggestions may be forwarded directly to the following:

Mail: American Water
6035 16th Street, Building #739
P.O. Box 1280
Fort Belvoir, VA 22060

Phone: (571) 339-8087

Share This Report

Landlords, businesses, schools, hospitals and other groups are encouraged to share this important information with water users at their location who may not receive this report directly.

Water Information Sources

The Military Services Group of American Water provides water and wastewater contract services to military installations across the country as part of the federal government's Utility Privatization Program. It operates and maintains the water and/or wastewater assets at Fort A.P. Hill, VA., Fort Sill, OK., Fort Leavenworth, KS., Scott Air Force Base, Ill., Fort Rucker, AL., Fort Meade, MD., Fort Belvoir, VA., Fort Hood, TX, Fort Polk, LA., Picatinny Arsenal, NJ., Hill Air Force Base, UT and Vandenberg Air Force Base, CA., Wright-Patterson Air Force Base, OH and Fort Leonard Wood, MO.

American Water O&M LLC. – Fort Belvoir provides water service to approximately 37,000 customers at Fort Belvoir, VA. With a history dating back to 1886, American Water is the largest and most geographically diverse U.S. publicly traded water and wastewater utility company. The company employs more than 7,100 dedicated professionals who provide regulated and market-based drinking water, wastewater and other related services to more than 14 million people in 46 states and Ontario, Canada. American Water provides safe, clean, affordable and reliable water services to our customers to make sure we keep their lives flowing. For more information, visit amwater.com and follow American Water on Twitter, Facebook and LinkedIn.

The web sites of US EPA Office of Water, the Centers for Disease Control and Prevention, Virginia Department of Health (VDH) provide a substantial amount of information on many issues relating to water resources, water conservation and public health. You may visit these sites as well as American Water's website at the following addresses:

Centers for Disease Control and Prevention
http://www.cdc.gov

United States Environmental Protection Agency
http://www.epa.gov/safewater

Virginia Dept. of Health – Office of Drinking Water
http://www.vdh.virginia.gov.odw

American Water
http://www.amwater.com

Fairfax Water
www.fairfaxwater.org

American Water Works Association
http://www.awwa.org

Safe Drinking Water Hotline: (800) 426-4791

Water Conservation Tips

Conservation measures you can use inside your home include:

- Fix leaking faucets, pipes, toilets, etc.
- Replace old fixtures; install water-saving devices in faucets, toilets and appliances.
- Wash only full loads of laundry.
- Do not use the toilet for trash disposal.
- Take shorter showers.
- Do not let the water run while shaving or brushing teeth.
- Soak dishes before washing.
- Run the dishwasher only when full.

You can conserve outdoors as well:

- Water the lawn and garden in the early morning or evening.
- Use mulch around plants and shrubs.
- Repair leaks in faucets and hoses.
- Use water-saving nozzles.
- Use water from a bucket to wash your car, and save the hose for rinsing.

Source Water Assessment Completed

Under the provisions of the Safe Drinking Water Act, states are required to develop comprehensive Source Water Assessment Programs (SWAPs) that identify the watersheds that supply public tap water, provide an inventory of contaminants present in the watershed, and assess susceptibility to contamination in the watershed. Based on the criteria developed by the state, the Potomac River and Occoquan Reservoir were determined to be of high susceptibility to contamination. This determination is consistent with the state's finding of other surface water (rivers, lakes, streams) throughout the Commonwealth of Virginia.

The assessment consists of an evaluation of the maps of the watershed area, an inventory of known land use activities, and documentation of any known source water contamination within the last five years. VDH is responsible for conducting source water assessments in Virginia. A secure version of the report is available by contacting Fairfax Water or by visiting their web site at www.fairfaxwater.org.

Where Does My Water Come From?

Fort Belvoir purchases its water supply from Fairfax Water, which serves the majority of northern Virginia and is the state's largest water utility. Fairfax Water draws surface water from two primary sources: the Potomac River and the Occoquan Reservoir, which is fed by the Occoquan River. The water supplied to Fort Belvoir comes from the Occoquan Reservoir and is treated at both the Frederick P. Griffith Jr. Treatment Plant and the James J. Corbalis Jr. Treatment Plant.

The Fourth Unregulated Contaminant Monitoring Rule (UCMR 4)

Assessment Monitoring

Included within UCMR 4 is assessment monitoring for a total of 30 chemical contaminants. This also includes one cyanotoxin group and nine cyanotoxins. In 2018, we began Phase 2 assessment monitoring for Cyanotoxins. All results from such assessments were non-detectable.

Cyanotoxins

Freshwater cyanobacterial blooms can be composed of a single-species or can range from a variety of toxic and non-toxin strains. Typically, cyanotoxins are produced and contained within actively growing cyanobacterial cells, and can then be released into the surrounding water.

Substances Expected to be in Drinking Water

To ensure that tap water is of high quality, U.S. Environmental Protection Agency prescribes regulations limiting the amount of certain substances in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

The source of drinking water (both tap water and bottled water) includes rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:
Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife.

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and Herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and may also come from gas stations, urban stormwater runoff, and septic systems.

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water hotline at (800) 426-4791. In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Information About Lead

Is there lead in my water?
Although we regularly test lead levels in your drinking water, it is possible that lead and/or copper levels at your home are higher because of materials used in your plumbing. If present, elevated levels of lead can cause serious problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. American Water is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead and copper exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the EPA Safe Drinking Water Hotline at 1-800-426-4791 or at http://www.epa.gov/safewater/lead.

Corrosion Control
We purchase water that is supplied from Fairfax Water. Fairfax Water takes steps to reduce the potential for lead to leach from your pipes into the water. This is accomplished by adding a corrosion inhibitor to the water leaving their treatment facilities. There are steps that you can take to reduce your household's exposure to lead in drinking water.

Special Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791) or by calling our Customer Service Center at (800) 685-8660.

Health Effects Language (RTCR)

Presence of Coliforms
"Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessments to identify problems and to correct any problems that are found."

Detection of *E. coli*
Although there was a detection of E. coli, there was no violation of the E. coli PMCL.

Activity associated with a Level 1 assessment
During the past year, we were required to conduct one Level 1 assessment. One Level 1 assessment was completed. In addition, we were required to take one corrective action and we completed this action.

How to Read the Data Tables

Starting with a **Substance**, read across. The **Year Sampled** is usually in 2018 or the year prior. **MCL** shows the highest level of substance (contaminant) allowed. **MCLG** is the goal level for that substance (this may be lower than what is allowed). **Average Amount Detected** represents the measured amount (less is better). **Range** tells the highest and lowest amounts measured. A **Yes** under **Compliance Achieved** means the amount of the substance met government requirements. **Typical Source** tells where the substance usually originates.

Unregulated substances are measured, but maximum allowed contaminant levels have not been established by the government.

Table Definitions and Abbreviations

- **Action Level:** The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.
- **MCL (Maximum Contaminant Level):** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- **MCLG (Maximum Contaminant Level Goal):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- **MRDL (Maximum Residual Disinfectant Level):** The highest level of disinfectant routinely allowed in drinking water. Addition of a disinfectant is necessary for control of microbial contaminants.
- **MRDLG (Maximum Residual Disinfectant Level Goal):** The level of drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.
- **mrem/year:** Millirems per year (a measure of radiation absorbed by the body.
- **NA:** Not applicable
- **ND:** Not detected.
- **NTU - Nephelometric Turbidity Units:** Measurement of the clarity, or turbidity, of water.
- **pCi/L (picocuries per liter):** Measurement of the natural rate of disintegration of radioactive contaminants in water (also beta particles).
- **pH:** A measurement of acidity, 7.0 being neutral.
- **ppm (parts per million):** One part substance per million parts water, or milligrams per liter.
- **ppb (parts per billion):** One part substance per billion parts water, or micrograms per liter.
- **TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water.

Water Quality Statement

American Water O&M LLC. and Fairfax Water jointly analyze your drinking water for more than 120 contaminants and of the few contaminants that were found, all were well below the EPA's MCLs. The MCLs were established by the U.S. Congress in the SDWA of 1974 and its revisions in 1986 and 1996. Testing is performed by Fairfax Water on a daily basis at the treatment plant and American Water performs additional testing to the water that is distributed throughout the Post.

We have learned through our extensive monitoring of testing that some contaminants have been detected but we continue to make improvements to your water system to ensure the quality of water provided and consumed by you is at its highest. We remain committed to providing you with information because internal customers are our best allies.

These standards and other drinking water regulations are constantly reviewed by the EPA and, if needed, revised to reflect the latest medical research. In the Commonwealth of Virginia, the Department of Health (VDH) enforces and overseas these standards and regulations.

Water Quality Results

FINISHED WATER DATA FROM FAIRFAX WATER (PURCHASED WATER)

Substance (units)	Year Sampled	MCL	MCLG	Average Amount Detected	Range	Compliance Achieved	Typical Source
INORGANIC							
Barium (ppm)	2018	2	2	0.028	ND - 0.045	Yes	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride (ppm)	2018	4	4	0.7	0.6 – 0.8	Yes	Water additive that promotes strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories
Nitrate [as Nitrogen] (ppm)	2018	10	10	1.19	0.57 – 1.87	Yes	Runoff form fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Nitrite[1] [as Nitrogen] (ppm)	2018	1	1	0.001[3]	ND - 0.013	Yes	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
RADIONUCLIDES							
Radium 226[2] (pCi/L)	2014	5	0	0.284	ND – 0.691	Yes	Erosion of natural deposits
Alpha emitters (pCi/L)[1]	2014	15	0	1.79	ND – 3.01	Yes	Decay of natural and man-made deposits
Beta/photon emitters (pCi/L) [1]	2017	50[2]	0	2.28	ND – 3.82	Yes	Decay of natural and man-made deposits
TOTAL ORGANIC CARBON							
Total Organic Carbon (TOC) (removal factor)[4]	2018	TT[4] (ratio)	n/a	1.3	1.2 – 1.4	Yes	Naturally present in the environment
Total Organic Carbon has no health effects. However, it provides for a medium for the formation of disinfection by-products. These by-products include trihalomethanes and haloacetic acids. Compliance with the treatment technique reduces the formation of these disinfection by-products.							
TURBIDITY							
Turbidity (NTU)	2018	TT[4] (NTU)	n/a	0.03	0.27 Highest Single Measurement	Yes	Soil runoff
Turbidity levels are measured during the treatment process after the water has been filtered, but before disinfection. The turbidity level of filtered water shall be less than or equal to 0.3 NTU in at least 95% of the measurements taken each month and shall at no time exceed 1 NTU. Lowest monthly % samples meeting treatment technique turbidity limit: 100.							

[1] Alpha Emitters, Radium 226 derived from Griffith 2013 data and Corbalis 2014 data; Beta/photon Emitters derived from Griffith 2013 data and Corbalis 2017 data.

[2] The MCL for the Beta particles is written as 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for Beta particles.

[3] This result is a mathematical average and is below the detection level for any individual sample result.

[4] TT=Treatment Technique

[5] Quarterly Running Annual Average (QRAA) of the monthly ratio of actual Total Organic Carbon removal versus required Total Organic Carbon removal between source and treated waters. QRAA is to be ≥ 1 to be in compliance.

[6] NTU=Nephelometric Turbidity Unit

FINISHED WATER DATA FROM FORT BELVOIR WATER DISTRIBUTION SYSTEM

DISINFECTANT AND DISINFECTION BY-PRODUCTS

Substance (units)	Year Sampled	MCL	MCLG	Average Amount Detected	Range	Compliance Achieved	Typical Source
Haloacetic Acids (HAA5) (ppb)	2018	60	0	19.37	6.56 – 51.81	Yes	By-product of drinking water disinfection
Total Trihalomethanes (TTHMs) (ppb)	2018	80	0	21.05	8.22-47.8	Yes	By-product of drinking water disinfection
Chloramines (ppm)	2018	4	4	2.11	0.13 - 3.39	Yes	Disinfectant water additive used to control microbes

MICROBIOLOGICAL CONTAMINANTS

Substance (units)	Year Sampled	MCL	MCLG	Total Samples Taken	Tested Positive	Compliance Achieved	Typical Source
Coliform, Total (TCR)	2018	Less than 2.5% of samples per month test positive for the presence of Total Coliform. All repeat samples test negative for the presence Total Coliform and E. Coli.	0	551	8	Yes	Naturally present in the environment
E.coli	2018	1. E.coli-positive repeat sample following TC-positive routine sample 2. TC-positive repeat sample following an E.coli positive routine sample 3. Failure to collect all required repeat samples following a E.coli-positive routine sample 4. Failure to test for E.coli when any repeat sample is TC-positive	0	8	1	Yes	Naturally present in the environment

LEAD AND COPPER

Substance (units)	Year Sampled	AL	MCLG	90th Percentile	Sites Above AL	Compliance Achieved	Typical Source
Lead (ppb)	2018	0.015	0	<0.004	0	Yes	Corrosion of household plumbing; Erosion of natural deposits
Copper (ppm)	2018	1.3	1.3	<0.1	0	Yes	Corrosion of household plumbing; Erosion of natural deposits